

ATOMIC ENERGY *newsletter*[®]

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO., 1000 SIXTH AVENUE, NEW YORK 18, N. Y.

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Dear Sir:

A central staff department to seek out and exploit new developments in the nuclear energy field has now been set up by Thompson Products, Inc., Cleveland, Ohio, manufacturer of aircraft, automotive, and electronic products. The new group will be headed by A. L. Pomeroy, associate director of staff research and development for Thompson. The new department will survey small companies in the nuclear field, with the possibility of acquisition by Thompson to be considered. Other work will be to promote the sale of established Thompson products, which have been modified for nuclear energy applications. (Other BUSINESS news, p. 2 this LETTER.)

A recent letter on thorium sent by the USAEC to the Department of Mines of the Territory of Alaska states that since 1947 the USAEC has been buying by-product thorium salts from U.S. processors of monazite sands. The letter further says that such thorium purchases have been made by the USAEC for research and development as well as for stockpiling. Contracts now in force seem to assure fulfillment of the stockpile goal within the time set by Commission, the letter explains. For that reason, the USAEC is not now negotiating any new thorium purchase contracts, the letter observes. The letter adds that while thorium may possibly be converted into a satisfactory nuclear fuel for the production of industrial power, the extent of such use will rest upon the results of present research and development programs. (Other RAW MATERIAL news, p. 5 this LETTER.)

Precision Radiation Instruments, Los Angeles, Calif., reportedly the largest manufacturer of radiation instruments in the world, has now bought Radio Craftsmen, Inc., Chicago manufacturer of electronic components and equipment, which will be operated as a wholly-owned subsidiary of Precision. Merchandise policies of Radio Craftsmen will be changed to correspond to those of Precision, which are factory-to-dealer. Since March, Radio Craftsmen had been selling direct to consumers. (Other FINANCIAL news, p. 3 this LETTER.)

A contract from the USAEC has now been obtained by Catalytic Construction Co. (subsidiary of Houdry Process), Philadelphia, for architect-engineer work in connection with a \$13,500,000 expansion of the USAEC's Rocky Flats, Colo., plant. The contract which was negotiated with Catalytic by the USAEC is a cost-plus-fixed-fee type. Part of the construction work at Rocky Flats will be let on a sub-contracted competitive bid basis. The present plant at Rocky Flats was begun in 1951, completed in 1953, and is being operated under USAEC contract by Dow Chemical Co., of Midland, Mich. (Other BIDS ASKED, CONTRACTS LET, p. 2 this LETTER.)

Nuclear power production and the construction of high-temperature high-pressure power plants, with progress reports by companies planning or now building nuclear power plants, will feature the 18th annual American Power conference to be held next March 21-23 in Chicago. The conference is sponsored by the Illinois Institute of Technology in cooperation with universities and technical societies.

ATOMIC ENERGY BUSINESS REPORTS...

MORE FIRMS TO PRODUCE NUCLEAR REACTOR FUEL ELEMENTS:- Latest firms that have decided to go into the nuclear reactor fuel element business are Babcock & Wilcox Co., of New York, and Cook Electric Co., of Chicago. This was revealed last fortnight when the firms applied to the USAEC in Washington for the licenses that are required for such commercial manufacturing work. Babcock said it will fabricate the elements in a \$2 million plant near Lynchburg, Va., while Cook will use its N. Southport Ave., Chicago, plant for production. (Metals & Controls Corp., Attleboro, Mass., which has been making these elements for the USAEC, had applied earlier to the USAEC for a license to make them commercially for private industry.)

ON-SITE ACTIVITY AT NUCLEAR POWER PLANT SITE:- First work began last fortnight on a 300-ft. weather tower near the Buchanan, N.Y., site of Consolidated Edison's nuclear power plant. Data will be gathered on the wind structure of the region to assure proper dispersion of exhaust gases from the projected plant's smokestacks. The work will be done by New York University's College of Engineering (research division) under a one year contract the University has with Consolidated Edison. Ben Davidson, University meteorologist, is in charge of the study.

ATOMIC TRADE FAIR BEING HELD NEXT WEEK:- Some 70 U. S. and foreign industrial firms, government agencies, etc., will display at the atomic trade fair being held next week (Sept. 27-30) in Washington, D.C. The fair is sponsored by the Atomic Industrial Forum, Inc., and is being held in conjunction with the Forum's annual meeting, at which commercial and international developments in atomic energy will be discussed. Fee for attendance at the meeting is \$50.00 for Forum members; \$75.00 for non-members. (Also meeting in Washington Sept. 29-30 is the American Nuclear Society, which will devote the two days to a Symposium on "Hot" Laboratories.)

REDUCTION IN COST OF NUCLEAR POWER PLANTS IS PREDICTED:- By increasing the size of nuclear reactors, using quantity production, reducing unit development costs and through other cost-cutting devices, the cost of a nuclear power plant in 1980 may be \$145 to \$165 per kilowatt, O.B. Falls, Jr., a General Electric atomic marketing executive told a group in Jackson, Michigan, recently. Mr. Falls observed that current cost of building a nuclear power plant of the boiling water type is between \$200 and \$270 per kilowatt, while the cost of building a conventionally fueled steam plant of the same capacity is now about \$175 per kilowatt. Nuclear plants will be needed, Mr. Falls asserted, because in 1964 (according to G-E estimates) there will be a 250% increase in electrical power capacity in the U.S. over capacity in 1954. He said G-E believes that nuclear energy offers an economical solution to such growing use of electrical power.

CONTRACTS LET, BIDS ASKED...for nuclear services & devices...

CONTRACTS LET:- A \$2,895,000 contract has now been awarded Sperry Rand, Inc. (Remington Rand div.) to construct a new type electronic computer for the USAEC's Livermore, Calif., research laboratory. Award was made by the Univ. of California, contract-operator of the laboratory. Remington Rand claims that the new computer will be 1,000 times faster than any now in use.

On a bid of \$657,500, Bickford Construction Co., Portland, Oregon, has now been awarded a contract by the USAEC for various construction work at the National Reactor Testing Station, Idaho Falls, Idaho. The work involves facilities in the aircraft nuclear propulsion area of the testing station.

Thirty-three new research contracts, and one hundred and forty-two renewals, all for one year each, have now been awarded by the USAEC to U.S. universities and private institutions. Fields covered include biology, medicine, biophysics, and radiation instrumentation. (Among new radiation instrumentation projects was a contract awarded to Levinthal Electronics Products, Inc., Redwood City, Calif., for a study of scintillation and other related properties of sodium iodide crystals. Renewals were given to New England Center Hospital to study and develop small Geiger-Muller and proportional counters for use in medical investigative work, and to New York University for investigation of certain physical and chemical dosimetric techniques.)

BIDS ASKED:- Bids have now been asked by the USAEC, Oak Ridge, Tenn., under invitation No. 401-56-2A for construction work in the K-25 area at Oak Ridge. Closing date for bids is Oct. 4, 1955.

ATOMIC ENERGY FINANCIAL REPORTS...

MINING FIRM TO RAISE CAPITAL ABROAD:- Basic Atomics, Inc., mining firm with lithium properties in North Carolina, has now received a commitment from a group of European investors to purchase 750,000 shares of common stock for \$1.5 million, according to J. B. Warren, president. The company will have 1,764,000 shares outstanding, if the commitment is taken up, as well as 555,000 shares reserved but not issued for outstanding warrants. Mr. Warren said the new money, with treasury funds, will be used to develop the firm's North Carolina property which adjoins Lithium Corp. of America.

NEW COMPANY ACQUIRED BY ELECTRONIC ORGANIZATION:- Norden-Ketay Corp. (which controls Nuclear Science and Engineering, Pittsburgh) has now acquired the Frohman Manufacturing Co., Miami, Fla. Frohman is expected to gross over \$1,500,000 a year, according to M. F. Ketay, president of Norden-Ketay. The newly acquired firm manufactures precision shafts, gears, gear trains, etc. No cash was involved in the purchase. Norden-Ketay bought Frohman for about 50,000 shares of Norden-Ketay stock.

FRENCH URANIUM MINING ORGANIZATION FORMED:- The Compagnie Francaise des Minerais d'Uranium has now been formed in France by Rothschild Brothers, the French banking house, with a capital of 400 million francs. The subscribers, in addition to the bank, are the Atomic Energy Commission and the Penarroya, Nickel Pechiney, Kuhlmann, Huaron, and Minerais et Metaux Companies.

ATLAS CORPORATION DISCOUNTS DISPLACEMENT OF URANIUM BY THORIUM:- Atlas Corp., headed by Floyd B. Odum, which has about \$15 million invested in uranium mining properties, has now written its stockholders that thorium offers "no short range threat to uranium" (for nuclear reactors), and that commercially available fusion energy is "just a gleam in a scientist's eye". The letter, over Mr. Odum's signature, noted that the USAEC guarantees the price of uranium to mine operators until Mar. 31st, 1962, and says the ore bodies Atlas owns or controls can be mined out before that date. (Indicative of the interest generated in thorium by statements at the Geneva Conference last month, which were responsible for Mr. Odum's letter, was the strength in Lindsay Chemical Co., stock on the Midwest exchange where it moved from about 31 at the time of the statements to about 43 last week. Lindsay is the largest processor of thorium in the U.S.).

One of Atlas's subsidiaries, Wasatch Corp., reported last week that it held 1,379,500 shares of Lisbon Uranium Corp. The shares had a market value last week of \$6,380,000. Their cost to Wasatch had been \$471,952. Wasatch also said it held 81,700 shares of Standard Uranium Corp., with a June 30, 1955 market value of \$185,825; acquisition cost had been \$70,490.

ANALYSES OF FIRMS IN NUCLEAR WORK NOW AVAILABLE:- A review of Consolidated Uranium Mines, Inc., is available from Tellier & Co., One Exchange Place, Jersey City, N.J. (Controlling interest in Consolidated Uranium is held by Mr. Walter Tellier, head of Tellier & Co.)..... An analysis of Lindsay Chemical Co. may be obtained from Harris, Upham & Co., 120 B'way., NYC..... A discussion of Westinghouse Electric Co. is offered by Reynolds & Co., 120 B'way., NYC.

NEW BOOKS & OTHER PUBLICATIONS...on nuclear energy subjects

Liquid Metals Handbook, Sodium and Sodium-Potassium Supplement, C.B. Jackson, editor-in-chief. Theory and practice for using these alloys in reactors; work sponsored by the USAEC and Bureau of Ships, U.S. Navy (\$2.00)..... Chemical Processing and Equipment: Reference Material. Compiled and edited by Amer. Soc. of Mech. Eng., General Precision Equipment Corp., Vitro Corp. of America. No. Y3.At7:2C42. (\$2.00)..... Thorium (with bibliography), No. 1 28.3/b:T 392.(5¢); Uranium (with bibliography), No. 1 28.3/b: Ur 1 (5¢)..... Sup't. of Documents, Wash. 25, D.C.

Production of Heavy Water. Part of the National Nuclear Energy Series, Div. III, Vol. 4F. Research and development involved in large scale production of heavy water. 394 pages. --McGraw-Hill Book Co., New York 36, N.Y. (\$5.25).

Nuclear Energy & Its Uses in Peace. Illustrated booklet in popular style. --H. M. Stationery Office, London (Eng.) (2s. 6d.)

Vulcanization of Rubber With High-Intensity Gamma Radiation. Techniques developed at the U.S. Air Force's research center, Wright Air Force Base. No. PB111675. --Office of Tech. Services, Wash. 25, D.C. (\$1.00).

NEW PRODUCTS, PROCESSES & INSTRUMENTS...in the nuclear field...

NEW PRODUCTS OFFERED BY MANUFACTURERS:- Geiger counter, Model UAC-402, of the "walking stick" type, for both betas and gammas, is said to operate more than 1000-hours on two 1½-volt flashlight cells. Complete instrument weighs three pounds, is 40-inches long, and less than 2-inches in diameter. --Universal Atomics Corp., New York 17.

NEW SERVICES FROM PRIMARY SUPPLIERS:- Cyclotron-produced radioisotopes are now being produced by Nuclear Science and Engineering Corp., the first firm in the U.S. to offer such a service. (The USAEC, which for six years had been the only U.S. supplier of such radioisotopes, has now discontinued supplying them.) Nuclear Science said it will use the facilities of the University of Pittsburgh's cyclotron, as well as similar facilities in the U.S., to produce the isotopes. Processing will then be done in its own radiochemical laboratory. Its charges will be the same as those of the USAEC. Catalog sheets, and further information, may be obtained from the firm at box 10901, Pittsburgh, Pa.

OFFICIAL AGENCIES AND PRODUCTS:- In the U.S., the Atomic Energy Commission, by a ruling effective September 26, 1955, has now removed export licensing controls on certain electrical, industrial, and scientific instruments and equipment useful in atomic energy work. Items involved are radiation detection and measurement instruments, mass spectrometers and mass spectrographs, large vacuum diffusion pumps, and certain types of electronuclear machines. (However, the U.S. Dep't. of Commerce will place most of these items under export licensing controls because of their potential strategic applications.)

In Great Britain, the U.K. Atomic Energy Authority recently reduced by about 20% the prices of two radioisotopes that find wide medical applications: iodine-131 and colloidal gold-198 (used for treating disorders of the thyroid gland and of the lymphatic system). They are distributed from the Authority's Radiochemical Centre, Amersham; customers for these particular isotopes include organizations in Australia, South Africa, New Zealand, Argentina, and Japan.

PRODUCTS FOR MEDICAL APPLICATIONS:- A conduction type radiation counter, small enough for use in the body of a living animal or person, has been designed and developed at Battelle Memorial Institute, Columbus, Ohio, under a contract with the medical laboratories of the U.S. Army's Chemical Corps. The heart of the counter is a special cadmium sulfide crystal mounted in the tip of an ordinary hypodermic needle. Three of the counters have been turned over to the Chemical Corps as experimental pieces of laboratory equipment. They have not yet been evaluated clinically. The crystals are sensitive to both beta particles and gamma rays. As a beta-particle counter, the instrument could conceivably be used for such radio-tracer studies as locating tumors which absorb more of radioactive phosphorous than does normal tissue. When used for counting gamma radiation, the device could measure dosages at the site of cancer during treatment with X-rays or radioactive materials. (While both Geiger-Muller and scintillation-type radiation counters have also been made in sizes small enough to fit into hypodermic needles, this new conduction type counter has greater gamma counting efficiency than the G-M counter, and does not require a light conducting tube within the hypodermic needle as is needed with the scintillation-type counter.)

Successful cases of diagnosis of cancer in the stomach and intestinal tract using radioactive phosphorous (P-32) were reported last week to the annual congress of the International College of Surgeons meeting in Philadelphia, by Dr. K. Nakayama, head of the department of surgery of the University of Chiba, Japan. Dr. Nakayama told of 100% accuracy in diagnosing fifty-three cases of cancer of the esophagus, and diagnosis with an accuracy of fifty-six out of fifty-eight cases of cancer of the stomach. Specific information not obtainable by other examinations is supplied by diagnosis with the radiophosphorous, he stated. Dr. Nakayama cited one case where the correct indication was cancer, although on operation the lesion proved to be so tiny that it could not be felt.

PRODUCT LITERATURE FROM MANUFACTURERS:- Cross reference sheets giving features of all existing single channel pulse height analyzers are available from Radiation Instrument Development Laboratory, 2337 W. 67th St., Chicago 36, Ill. Newly issued technical bulletin of the firm's Model 2508 monitor for effluent coolant water from a nuclear reactor may be obtained from Radiation Counter Laboratories, Inc., Skokie, Ill.

RESEARCH & DEVELOPMENT...in the nuclear field...

OIL COMPANY TO BUILD NUCLEAR SCIENCE LABORATORY:- A nuclear science laboratory is now to be located at the research center of Gulf Oil Corp., in Harmarville, Pa., which is operated by Gulf's Research and Development Co. Cost of the laboratory is estimated at one-half million dollars. Principal unit in the laboratory will be a 8 million electron-volt Van de Graaff machine which is now being built for Gulf by High Voltage Eng. Corp., Cambridge, Mass., with an estimated completion date of September, 1958.

"HOT CELL" LABORATORY COMPLETED AT NUCLEAR RESEARCH CENTER:- The first of three major units at the nuclear energy research center of Battelle Memorial Institute, near Columbus, Ohio, has just been completed. This is the center's "hot cell" laboratory, which will be used for studies of the effects of radiation on materials used in nuclear reactors and on the handling and processing of nuclear fuels and other radioactive materials. (Last week Battelle received a permit from the USAEC for the swimming-pool-type research reactor which will be another unit at this research center. American Machine & Foundry, New York, has designed and is constructing this reactor.)

EXPERIMENTAL TESTS OF NUCLEAR WEAPONS SCHEDULED:- Progress by Great Britain in atomic weapons development has been so marked that new tests of their explosive properties are now necessary, Britain's Ministry of Supply said last fortnight in London. Consequently, new tests will be held April, 1956, in the Monte Bello Islands (off the northwest coast of Australia) by British and Australian scientific and service people, to determine the quality of the newly developed bombs. (Later in 1956 additional tests will be held at the new atomic weapons proving ground at Maralinga, in the central Australian desert.)

FUNCTION OF USAEC'S SALTON SEA INSTALLATION REVEALED:- The USAEC disclosed last fortnight that its installation at the southern end of the Salton Sea, Calif., is being used to test the ballistic characteristics of atomic weapons in air drops. Casings which correspond to the various housings for nuclear weapons, weighted to compensate for their lack of nuclear explosives, are being dropped from aircraft into the Sea, while their trajectories are plotted with tracking telescopes and high-speed cameras. The installation is operated by the Sandia Corp., (subsidiary of Western Electric Co.) which also operates Sandia Base laboratories, near Albuquerque, N.M. At Sandia Base, the ordnance properties of nuclear weapons are established.

RAW MATERIALS...prospecting, mining, marketing...

UNITED STATES:- Continental Uranium Co., of Chicago, is now negotiating with the USAEC's Grand Junction, Colo., office for the establishment of a uranium processing mill near La Sal, San Juan County, Utah. The mill would employ an acid leach process which reportedly increases vanadium recovery from the uranium-vanadium ores, Continental wants the mill for its own rapidly developing open pit operation, and for its affiliated Woodmont Corp. Standard Uranium Corp. now reports that it is shipping at a 500-tons per day rate from its uranium properties in the Big Indian district, Utah.... Col-U-Mex Uranium Corp., Albuquerque, N.M., has now reported discovery of a 1200-ft. channel area with uranium mineralization in the Green River district of Emery County, Utah. The firm reports chemical assays on faces showed ore to average 0.27% uranium oxide and higher.... Moab Mines, Inc., is now negotiating for a lease on a uranium ore body valued at what the firm states is "over \$100,000." The property is located on three claims in the East Canyon area of San Juan County, Utah.

CANADA:- Stancan Uranium Corp., which has been conducting an extensive drilling program on several of its properties in the Blind River area, N. Ontario, has now reported plans for further work on its 18 property at Quirke. At this property, Stancan now plans to concentrate a number of diamond drills to probe and prove up an orebody within a rectangular area approximately 2,600-ft. by 800-ft. The newly-completed concentrating plant of Nu-Age Uranium Mines is now operating at Wilberforce, Ont., some 140-miles northeast of Toronto, Ontario. Uranium ore concentrates are being accumulated preparatory to shipment.

Sincerely,

The Staff,
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September 20th, 1955

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF THE HISTORY OF ARTS
AND ARCHITECTURE
OFFICE OF THE CURATOR
1100 EAST 58TH STREET
CHICAGO, ILLINOIS 60637
TEL: 773-936-5000
FAX: 773-936-5001
WWW.HA.UCHICAGO.EDU

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